

## BRICKS &amp; MORTAR

## GRADUATE JOURNAL

## At the crossroads

As I approach the halfway point in my PhD, the question about what to do after graduate school is becoming more pressing. My decision is between pursuing my academic research further, or taking an entrepreneurial path. The choice may ultimately depend on the success of my research — altering the catalytic properties of enzymes, an important aspect in biocatalysis. If my experiments succeed, they may open academic doors; if not, there are other options that I would like to explore, such as founding a company.

The entrepreneurial bug comes from friends and colleagues who have started their own businesses. This was particularly endemic before the bubble burst two years ago, but Switzerland still seems to have the right spirit and infrastructure for biotech to thrive. I can envisage setting up a company here with similarly motivated people.

Starting a company requires further skills in addition to the chemistry and biology with aspects of physics that my research involves. So I have not only had to go back to school, but I am also learning to communicate with people from other disciplines who have expertise in different topics to me. I am sure this experience will be of use in the future — regardless of the choice I make when I finish my PhD. ■

**Philipp Angerer is a second-year PhD student in biotechnology at the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland.**

## Lancaster Environment Centre

Last month, what will become one of the largest environmental science centres in Europe opened its doors in Britain. When it's fully staffed, the Lancaster Environment Centre will employ some 300 scientists, including graduate students and postdocs in five departments.

The facility, costing £25 million (US\$46 million), combines five environmental-science departments from Lancaster University with the Centre for Ecology and Hydrology, run by the Natural Environment Research Council (NERC).

The centre is designed to emphasize a multidisciplinary approach to environmental science, says its director, Bill Davies. For example, its five departments can approach different aspects of complex problems, such as

how the genetic make-up of different plants can affect their nitrogen uptake, or how persistent organic pollutants — volatile compounds released by paints — build up in the atmosphere, move around the world and end up in humans' fatty tissue. The project is noteworthy because of the way it combines both government and academic labs, takes a multidisciplinary approach to environmental science, with a strong social-science component, and creates a critical mass of environmental scientists. "We're one of the biggest groups of its kind in Europe," says Davies.

The building, funded jointly by the NERC and Lancaster University, includes controlled environment facilities, 15 glasshouses and equipment to allow integrative studies of terrestrial, aquatic and atmospheric systems. It is also taking the

kind of computational approach to environmental science that has been the norm in physics and is becoming increasingly common in biology.

Davies says that he is now recruiting a chair in informatics and wants to develop environmental informatics as a specific unit for the centre, with the possibility of adding a new wing to the centre later.

Davies also envisages spinning out some businesses from the site, in much the same way that biotech companies spring from university life-science departments. For instance, scientists at the centre could do contract work on environmental chemistry, or computer modelling of regional environmental problems such as flood prediction. "We can see ways of building on that commercially," explains Davies. ■

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Paul Smaglik is editor of *Naturejobs*.

## MOVERS Sixto Gonzalez, director, Arecibo Observatory, Puerto Rico



When Sixto Gonzalez left the Massachusetts Institute of Technology (MIT) for his native Puerto Rico midway through his undergraduate education, little did he realize that it would benefit his career.

Gonzalez left, he says, because although he had little difficulty adjusting to a different language, he struggled with the heavy workload in a highly competitive environment — not to mention the long, cold winters, at odds with his native tropical climate.

But a choice based partly on culture shock was served up with a healthy

dose of serendipity. While at the University of Puerto Rico he was able to work at Arecibo Observatory, home of the world's largest and most sensitive single-dish radio telescope — and he has remained there ever since. He says that if he had stayed at MIT, he would never have had the opportunity to work at the observatory.

The opportunities were plentiful. As an undergraduate, he was able to present papers at international conferences based on his findings at Arecibo. As a graduate student, he was able to base his thesis on data he gleaned from a summer spent at the observatory. And as a postgraduate, his familiarity with the instrumentation at Arecibo led him to getting a job there — making him the first native-born Puerto Rican to become a staff scientist at the facility.

His latest appointment extends that honour to the directorship of the

observatory, although Gonzalez has mixed feelings about distinctions based on his nationality. On one hand, he is proud of his heritage and is happy to represent it. But on the other, being singled out by his nationality makes him uncomfortable. He is more excited about having two more Puerto Rican scientists joining him at the facility than about becoming the first director to hail from the country.

Gonzalez says that he is enjoying being in a position to help others to deal with the difficulties he faced early in his career at MIT. Young scientists need a support network, mentoring, ideas for projects and help to bring projects into fruition.

He sees his latest role as helping to provide all these things. "When you're in a position to make a difference for people, you have to provide them with as many opportunities as you can give them," Gonzalez says. ■

**CV** **2001–2003:** Assistant director of Space and Atmospheric Sciences, National Astronomy and Ionosphere Center, Arecibo, Puerto Rico  
**1999–2003:** Senior research associate, Arecibo Observatory, Puerto Rico  
**1993–1999:** Research associate, Arecibo Observatory